

Practice Test Solutions

$$1. (-12) \times (+2) \times (-5) = (-24) \times (-5) \\ = (+120)$$

$$2. (-20) \div (-10) = (+2)$$

3.

$$\begin{aligned} & [9 \times (-6)^2 - 9 \times (2)^2] \div (4+5) \\ & = [9 \times (+36) - 9 \times (2)^2] \div (4+5) \\ & = [9 \times (+36) - 9 \times 4] \div (4+5) \\ & = [324 - 9 \times 4] \div (4+5) \\ & = [324 - 36] \div (4+5) \\ & = 288 \div (4+5) \\ & = 288 \div 9 \\ & = 32 \end{aligned}$$

$$\begin{aligned} 4. \text{ Start} &= 25^{\circ}\text{C} \\ \text{change} &= -4^{\circ}/\text{h} \\ \text{hours} &= 9 \text{ h} \\ 25^{\circ}\text{C} - 4 \times 9 \\ &= 25 - 36 \\ &= -11^{\circ}\text{C} \end{aligned}$$

$$\begin{aligned} 5. \text{ Final elevation} &= 1215\text{m} \\ \text{Initial elevation} &= 3640\text{m} \\ \text{Time} &= 5\text{h} \\ \text{Vertical Speed} &= \frac{1215 - 3640}{5} \\ &= \frac{-2425}{5} \\ &= -485 \text{ m/h} \end{aligned}$$

$$\begin{aligned}
 6. A &: 3(-7)^2 - 4 \times 6[2 - (-4)] \\
 &= 3(-7)^2 - 4 \times 6[6] \\
 &= 3(+49) - 4 \times 6[6] \\
 &= 147 - 4 \times 6[6] \\
 &= 147 - 24[6] \\
 &= 147 - 144 \\
 &= +3
 \end{aligned}$$

$$\begin{aligned}
 B & \quad (-3)^3 - \frac{6(-12)(-3)}{(-9)} \\
 &= -27 - \frac{6(-12)(-3)}{(-9)} \\
 &= -27 - \frac{-72(-3)}{-9} \\
 &= -27 - \frac{(+216)}{-9} \\
 &= -27 - (-24) \\
 &= -3
 \end{aligned}$$

$A = (+3)$
 which is
 4 away
 from
 negative one.

B is (-3) which
 is 2 away from (-1)
 $\therefore B$ is closer.

$$\begin{aligned}
 7. & (+144) \div (-3) \times (+8) \\
 & = (-48) \times (+8) \\
 & = -384
 \end{aligned}$$

$$\begin{aligned}
 & \text{OR} \\
 & (+144) \times (-3) \div (+8) \\
 & = -432 \div +8 \\
 & = -54
 \end{aligned}$$

$-54 > -384$
 \therefore the second
 equation is
~~less~~
 greater.

If the number of negative integers being multiplied is even, the product is positive. If the number of integers being multiplied is odd, then the product is negative.

$$\begin{aligned}
 &(-1)(-1) = +1 \\
 &(-1)(-1)(-1)(-1)(-1)(-1)(-1) = -1 \\
 &\quad \underbrace{\hspace{1cm}} \quad \underbrace{\hspace{1cm}} \quad \underbrace{\hspace{1cm}} \\
 &\quad \quad \quad \times 1 \quad \quad \times 1 \quad \quad \times 1 \\
 &(-1)(-1)(-1)(-1)(-1)(-1) = +1
 \end{aligned}$$

$$-2, -3, -4, -5, -6, -1$$

2 2×3

a number that is divisible by -6 is also divisible by -2 and -3.

-4, and -6 are both multiples of -2.

I only need one factor of -2.

SO I would end up with $-(2 \times 5 \times 6 \times 7) = -420$

10.

$$\begin{array}{r}
 (+16) \div \\
 \hline
 +2 \\
 -2 \\
 \hline
 +4 \\
 -4 \\
 \hline
 +8 \\
 -8 \\
 \hline
 +16 \\
 -16 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 \div \\
 \hline
 -8 \\
 +8 \\
 \hline
 +4 \\
 -4 \\
 \hline
 -1 \\
 +1 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 \div \\
 \hline
 -1 \\
 +1 \\
 \hline
 \end{array}$$